

S067116



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

RBW0905G00134-3G-01
Job Sheet 176772



Part No: RBW0905G00134-3G-01

Job Qty: 1 ea

Part Name: Tow Dolly Tongue Assembly



Part Weight: 0 lbs

Status: Completed

Priority: Medium

Job Created: 4/30/18

Job Tracking No:

Due Date: 4/30/18

Created By: Michelle Gagnon-Donovan

Type: SOLD

Description:

Note: DWG RBW0905G00134-3G-01 Rev 5 IPP Rev A 18.02.14 new issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Purchasing	1 pcs		4/30/18	0.00	0.00	Purchasing		mtf 18/4/30
110	Packaging	1 pcs		4/30/18	0.00	0.00	Packaging2		mtf 18/4/30
120	QC	1 pcs		4/30/18	0.00	0.00	QC6		38
130	Packaging	1 pcs		4/30/18	0.00	0.00	Packaging3		9-88
140	QC21-FG	1 Ea		4/30/18	0.00	0.00	QC21		mtf 18/4/30

Part Op 100 - Issue P/O: 639245 MANUFACTURE RBW0905G00134-3G-01 AS PER DWG Supplier: METEC Certificate of Descriptions: conformity is required

DAS
21
9-88

MAY 02 2018

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
RBW0905G00134-3G-01	Tow Dolly Tongue Assembly	1 Ea (1 ea)	100-Purchasing	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	RBW0905G00134-3G-01	1	0	1

Allocated Container Detail

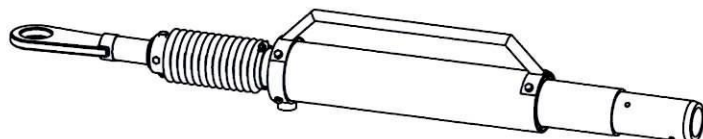
Qty	Container No	Location	Init
1	S067115	purchasing	

Part Specifications

Specifications could not be found.

Plex 5/1/18 7:59 AM Dart.Gagnon.Michelle

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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
1		DELETED -043 FROM DWG., MADE REFERENCE IN BOM FOR -043 TO SEE RBW0905G12351-3G.	4/28/2010	RJC
1A		REMOVED BREAK AWAY ASSY. PARTS -053 THRU -063, -173 THRU -177 & -181 THRU -187. REMOVED ASSOCIATED PAGES, AND RE-NUMBERED ALL PAGES & CORRECTED BOM.	5/19/2010	RJC
2		-061 ADDED NOTES TO PUNCH HOLES AS REQ. IN BELLOWS AND TO COMPRESS ASSEMBLY. REMOVED -149 AND -171. -063 REMOVED PART -011 FROM WELDMENT. -007, -011, -017, -019 CHD DIM WAS Ø.473 S Ø.472 AND ADDED LIMITS. -015, -021, -023 ADDED NOTE FOR FINISH "ANODIZE CLEAR". -041 ADDED 16.562 REF DIM. -033 ADDED NOTES TO MASK AREA PRIOR TO POWDER COAT AND FOR DUAL FINISH. MOVED TONGUE ASSY. INTO SEPARATE FILE AND CORRECTED BOM.	1/21/2013	BIM
3		CHD DIM PRECISION FROM .XXX TO .XX ON NON-CRITICAL PARTS & UPDATED SHEET FORMATS. SEPARATED PARTS TO INDIVIDUAL SHEETS. -001 REMOVED FINISH NOTE WAS "FORREST T-5920 SP YELLOW RIBBON". -013 SEPARATED INTO TWO WELDMENTS, MOVED PARTS -027 & -029 TO ASSEMBLY. -001, -014 ADDED WELDMENT FOR PARTS -015, -017, & -019. -018 DELETED NOTE TO FINISH BEFORE WELDMENT. -031 MOVED TO SEPARATE DWG IS RBW0905G01652-3G. -033 CORRECTED SECTION VIEWS. -041 CORRECTED DESCRIPTION IN BOM WAS "POWDERCOAT WELDMENT" IS "HANDLE WELDMENT". ADDED FINISH POWDER COAT FED #13536. -235 ADDED B/O INFO TO BOM IS MCMASTER-CARR #9421K65. -245 WAS PLASTIC ZIP-TIE IS S.S. HOSE CLAMP. -185 CHD C-SINK DIA WAS Ø.50 S Ø.54.	12/18/2013	CFS
4	14-017	UPDATED TO NEW DRAFTING STANDARDS. -007 CHD DIM WAS Ø.472 ±.0003. -0000 S Ø.472 ±.002. -000. -015 CHD DIM WAS Ø.473 THRU ALL S.F. -019 S Ø.472 ±.002. -000 THRU ALL. ADDED DIM Ø2.00 ±.030. -015 S 1.20. -017 CHD DIM WAS Ø.472 ±.0003. -0000 THRU ALL S Ø.472 ±.002. -000 THRU ALL. -021 CHD DIM WAS Ø3.500 S.F. -035 S (Ø3.500) S.F. -035. -027 CHD B/O INFO WAS MCMASTER-CARR #92240A101 IS AN4-3A. -029 CHD QTY WAS 2 S 8. -033 CHD DIMS WAS 2X Ø.316 THRU S Ø.316 THRU ALL. WAS 2X Ø.316 THRU S Ø.316 THRU ALL. -035 CHD DIMS WAS Ø4.000 S (Ø4.000). WAS Ø3.500 S (Ø3.500). -037 CHD DIM WAS Ø3.500 S.F. -035 S (Ø3.500) S.F. -035. -039 CHD DIMS WAS (Ø4.375) S (Ø4.38). WAS Ø4.000 S (Ø4.000) S.F. -035. -041 CHD DIM WAS 17.662 S 17.667. -049 S -051 CHD DIM WAS 2.63 S .28. -185 CHD DIM WAS Ø.257 S Ø.28. -145 DELETED. CHD TOLERANCE ON NON-CRITICAL DIMENSIONS.	11/17/2014	DPD
5	14-018	UPDATED TO NEW STANDARDS. -003 CHD TOL WAS ±.005/±.01/±.1 S ±.010/±.03/±.1. -005 CHD DIM WAS 1.74 S 1.75. WAS (.625) S .63. -009 CHD DIM WAS (.075) S .08 CHD TOLERANCE WAS ±.005/±.01/±.1 S ±.010/±.03/±.1. -014 CHD TOL WAS ±.005/±.01/±.1 S ±.010/±.03/±.1. -018 CHD DIM WAS (Ø2.00) S Ø2.00. -017 CHD DIM WAS (.395) S .40 WAS Ø2.00 S Ø2.02. -021 CHD DIM WAS (Ø3.500) S.F. -035 S (Ø3.480) S.F. -035. -033 CHD DIM WAS 4X 1/4-28 UNF S 1.50 S 1.50 1/4-28 UNF S 1.50. REMOVED DIM Ø.264 S 1.50. -035 CHD DIM WAS (Ø4.000) S Ø4.00. WAS (Ø3.500) S (Ø3.50). -037 CHD DIM WAS (Ø3.500) S.F. -035 S (Ø3.480) S.F. -035. -039 CHD DIM WAS (Ø4.000) S.F. -035 S (Ø4.02) S.F. -035. -49, -51 CHD DIM WAS (.075) S .08. WAS 2X .28 S 2X .200. -33 CHD B/O INFO WAS DART #RBW0905G12631-3G IS RBW0905G01652-3G. REMOVED TYP. -191 CHD B/O INFO WAS 3/8-24 UNF (MCMASTER-CARR #97135A235) IS 3/8-24 UNF (MCMASTER-CARR #9056A220).	10/24/2016	SM

ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
						X	-001	1	TONGUE ASSEMBLY			2
			1	X			-003		TONGUE WELDMENT			3
					1		-005		TONGUE	304 S.S.		4
					1		-007		TONGUE TUBE	304 S.S.		5
					1		-009		TONGUE CAP	304 S.S.		6
					1		-011		SLIDE PIN	304 S.S.		7
			X		1		-013		SPRING SECTION WELDMENT			8
			X	1			-014		GUIDE WELDMENT			9
			1				-015		DRAW TUBE	6061		10
			1				-017		SPRING CENTER STOP	6061		11
			1				-019		CENTER STOP PIN	6061		12
					1		-021		SPRING FRONT STOP	6061		13
					1		-023		FRONT COLLAR	6061		14
					1	B/O	-025		SPRING	SPRING STEEL	CENTURY SPRING #73356	2&8
					2	B/O	-027		HEX HEAD CAP SCREW	S.S.	1/4-28 UNF X 3/8 AN4-3A	2
					8	B/O	-029		FLAT WASHER	PLATED STEEL	Ø1/4 AN960-416	2
			X		1		-033		SPRING COVER WELDMENT			15
			1				-035		SPRING COVER	6061		16
			1				-037		TAIL	6061		17
			1				-039		SPRING COVER	6061		18
X					1		-041		HANDLE WELDMENT			19
1							-043		TOP TUBE	STEEL SQ. TUBING		20
1							-045		FRONT TUBE	STEEL SQ. TUBING		21
1							-047		REAR TUBE	STEEL SQ. TUBING		22
1							-049		FRONT MOUNT	1018		23
1							-051		REAR MOUNT	1018		24
					1		-155		STOP	WHITE DERLIN		25
					6	B/O	-163		HEX HEAD CAP SCREW	PLATED STEEL	1/4-28 UNF X 1-1/8 (MCMASTER-CARR #9260A701)	2
					1	B/O	-167		FLAT SOCKET HEAD CAP SCREW	PLATED STEEL	1/4-28 UNF X 3/4 (MCMASTER-CARR #91263A255)	2
					1	B/O	-191		NYLON INSERT LOCK NUTS	PLATED STEEL	3/8-24 UNF (MCMASTER-CARR #9056A220)	2
					1	B/O	-235		C.V. BOOT; ROUND BELLOWS	BLACK RUBBER	2-1/2 CUFF ID (MCMASTER-CARR #9421K65)	8
					1	B/O	-245		HOSE CLAMP	S.S.	1/2 X 2-1/16-3 (MCMASTER-CARR #5415K22)	8
					1				TONGUE SHEAR BOLT		RBW0905G01652-3G	2

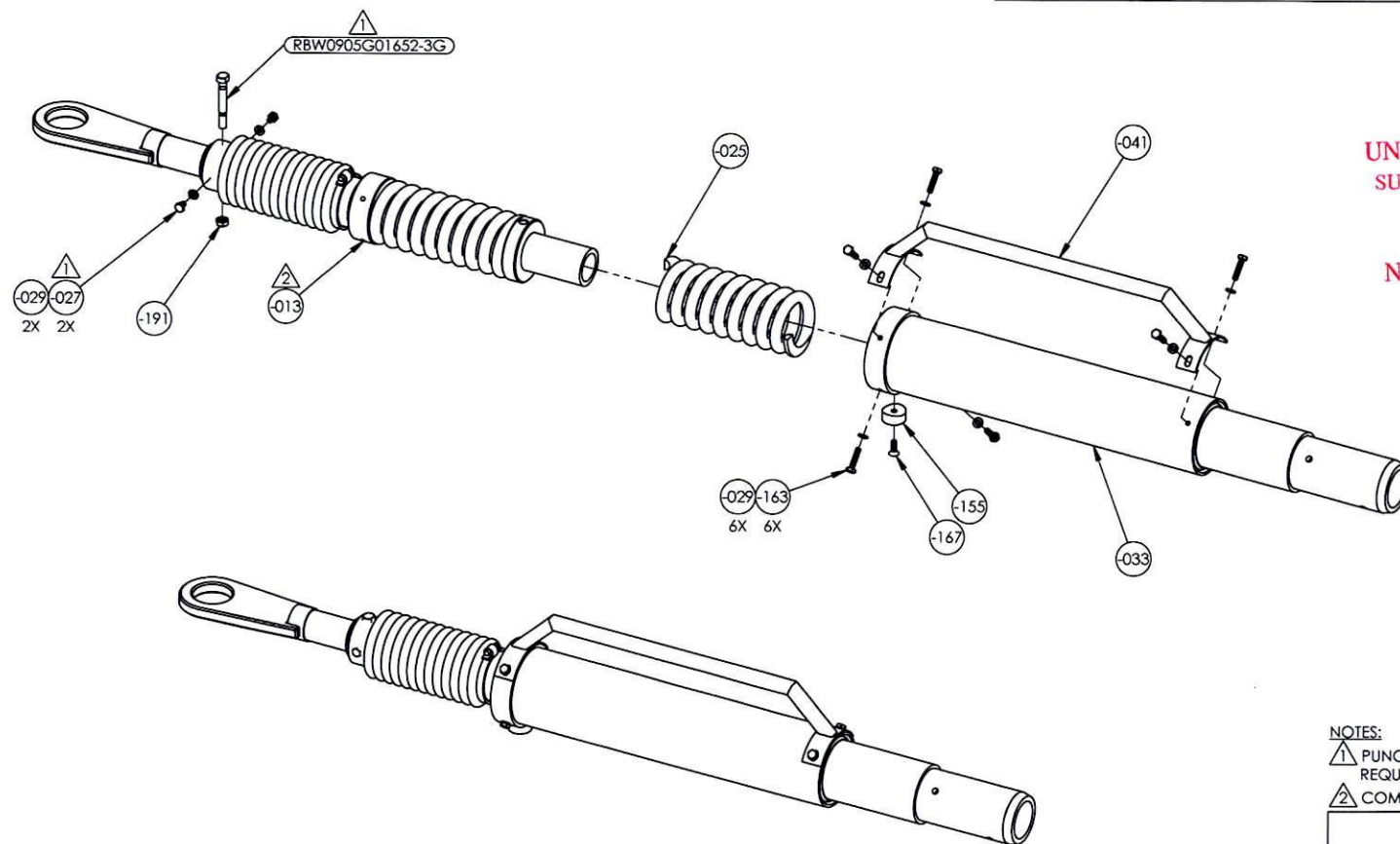
NOTES:

1. USED IN ASSY RBW0905G00134-3G.
2. USED WITH RBW0905G12631-3G.
3. USED WITH RBW0905G00134-3G-03.

DART AEROSPACE	
TITLE TONGUE ASSEMBLY, TOW DOLLY	
DWG NO. RBW0905G00134-3G-01	REV 5
MAT'L REF. FINISH SPEC	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ± 1/8 DECIMALS ± .01 ANGLES ± 1° SURFACES ± 125
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES 515 ± .45" OR .015"
CHECKED: CLOUGH	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M 2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AGUSTA AW139
SCALE 1:8	DATE 2/12/2010
SHEET 1 OF 25	

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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
2		-001 ADDED NOTES TO PUNCH HOLES AS REQ. IN BELLOW AND TO COMPRESS ASSEMBLY. REMOVED -169 & -171.	1/21/2013	BIM
3		-001 REMOVED FINISH NOTE WAS "FORREST 1-5920 59 YELLOW RIBBON". MOVED PARTS -027 & -029 TO ASSEMBLY -001.	12/18/2013	CFS



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NO. 176772

APR 30 2018

NOTES:

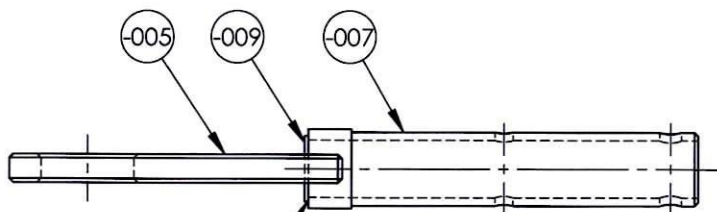
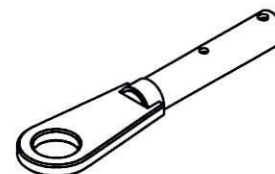
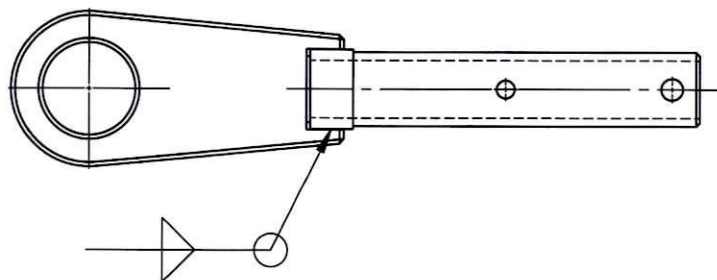
- 1. PUNCH HOLES INTO -235 BELLOW AS REQUIRED THEN FASTEN.
- 2. COMPRESS SPRINGS TO ASSEMBLY.

DART AEROSPACE																	
TITLE TONGUE ASSEMBLY, TOW DOLLY																	
DWG NO. RBW0905G00134-G-01-001	REV 5																
<table border="0"> <tr> <td>MAT'L</td> <td>UNLESS OTHERWISE SPECIFIED</td> </tr> <tr> <td>FEAT</td> <td>DIMENSIONS ARE IN INCHES</td> </tr> <tr> <td>USAT</td> <td>.XXX ± .005 FRACTIONS ± 1/8</td> </tr> <tr> <td>FINISH</td> <td>.XX ± .01 ANGLES ± .5°</td> </tr> <tr> <td>SPEC</td> <td>.X ± .1 SURFACES ± 125°</td> </tr> </table>		MAT'L	UNLESS OTHERWISE SPECIFIED	FEAT	DIMENSIONS ARE IN INCHES	USAT	.XXX ± .005 FRACTIONS ± 1/8	FINISH	.XX ± .01 ANGLES ± .5°	SPEC	.X ± .1 SURFACES ± 125°						
MAT'L	UNLESS OTHERWISE SPECIFIED																
FEAT	DIMENSIONS ARE IN INCHES																
USAT	.XXX ± .005 FRACTIONS ± 1/8																
FINISH	.XX ± .01 ANGLES ± .5°																
SPEC	.X ± .1 SURFACES ± 125°																
<table border="0"> <tr> <td>DRAWN BY: PERRITT</td> <td>1. BREAK ALL SHARP EDGES</td> </tr> <tr> <td>CHECKED: CLOUGH</td> <td>.015 ± .45° OR .015R</td> </tr> <tr> <td>OPPS APPR: ANDERSON</td> <td>2. DIMENSIONAL LIMITS APPLY</td> </tr> <tr> <td>QA APPR: LINDSAY</td> <td>AFTER PLATING</td> </tr> <tr> <td>APPROVED: GILBERT</td> <td>3. INTERPRET DIM AND TOL PER</td> </tr> <tr> <td></td> <td>ASME Y14.5M-2009</td> </tr> <tr> <td></td> <td>USED ON MODEL</td> </tr> <tr> <td></td> <td>AGUSTA AW139</td> </tr> </table>		DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES	CHECKED: CLOUGH	.015 ± .45° OR .015R	OPPS APPR: ANDERSON	2. DIMENSIONAL LIMITS APPLY	QA APPR: LINDSAY	AFTER PLATING	APPROVED: GILBERT	3. INTERPRET DIM AND TOL PER		ASME Y14.5M-2009		USED ON MODEL		AGUSTA AW139
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES																
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	ASME Y14.5M-2009																
	USED ON MODEL																
	AGUSTA AW139																
SCALE 1:6	DATE 2/12/2010																
SHEET 2 OF 25																	

-001
TONGUE ASSEMBLY

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2		-003 REMOVED PART -011 FROM WELDMENT.	1/21/2013	BIM	SE
5	16-0188	-003 CH'D TOL WAS $\pm.005/\pm.01/\pm.1$ IS $\pm.010/\pm.03/\pm.1$.	10/24/2016	SM	JAG



WELD TO TUBE
TURN SMOOTH
THEN WELD TO
TONGUE

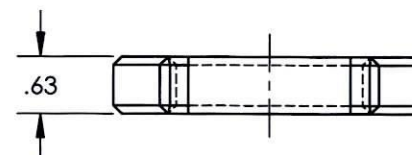
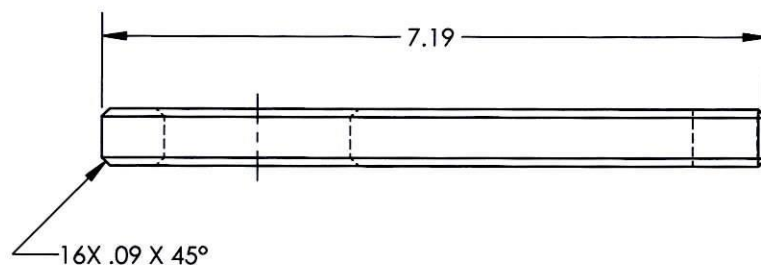
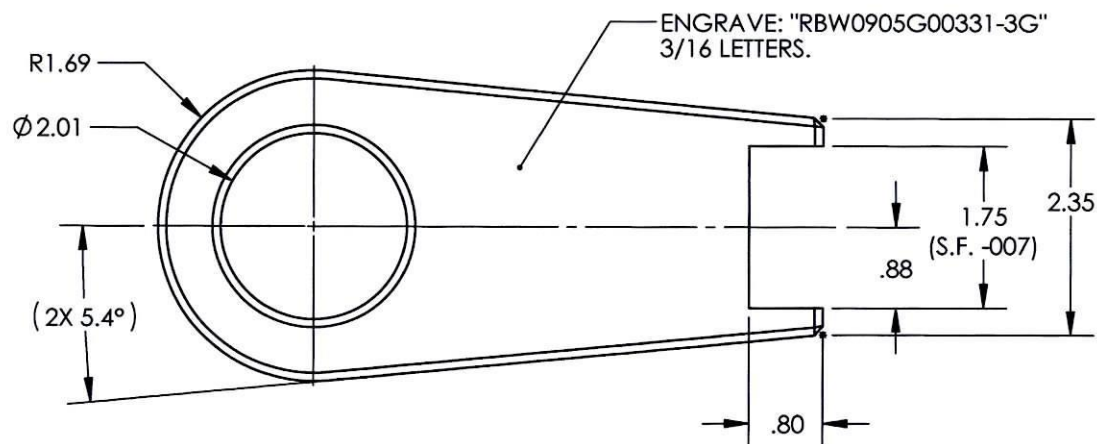
-003

TONGUE WELDMENT

DART AEROSPACE	
TITLE TONGUE ASSEMBLY, TOW DOLLY	
DWG NO. RBW0905G00134-3G-01-003	REV 5
MAT'L REPT TREAT FINISH SPEC	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX $\pm$.010 FRACTIONS $\pm$ 1/8 .XX $\pm$.03 ANGLES $\pm$ 1° .X $\pm$.1 SURFACES = 125°
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: CLOUGH	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AGUSTA AW139
SCALE 1:4	DATE 2/12/2010 SHEET 3 OF 25

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5	16-0188	-005 CH'D DIM WAS 1.74 IS 1.75, WAS (.625) IS .63.	10/24/2016	SM	JAG

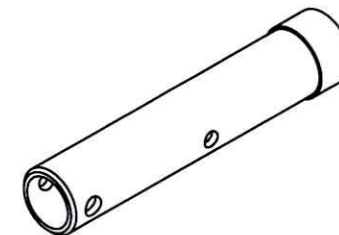



 TONGUE

	
TITLE TONGUE ASSEMBLY, TOW DOLLY	
DWG NO. RBW0905G00134-3G-01-005	REV 5
MAT'L 304 S.S. TREAT FINISH SPEC	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± .5° .X ± .1 SURFACES = 125✓	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING 3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
DRAWN BY: PERRITT	USED ON MODEL
CHECKED: CLOUGH	AGUSTA AW139
OPPS APPR: ANDERSON	
QA APPR: LINDSAY	
APPROVED: GILBERT	
SCALE 1:2	DATE 2/12/2010 SHEET 4 OF 25

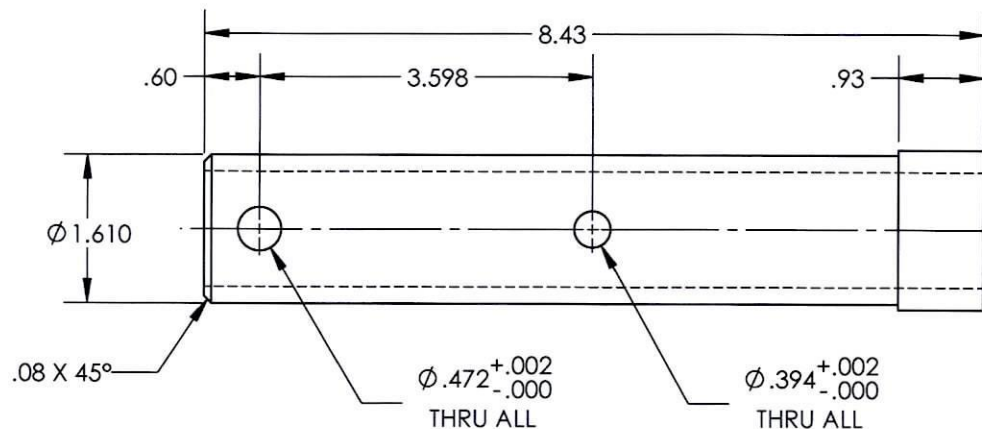
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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2		-007 CH'D DIM WAS Ø.473 IS Ø.472 AND ADDED LIMITS.	1/21/2013	BIM	SE
4	14-0217	-007 CH'D DIM WAS Ø.472 +.0003 -.0000 IS Ø.472 +.002 -.000.	11/18/2014	DPD	JAG



Ø 1.73
(S.F. -005)

Ø 1.25



(-007)

TONGUE TUBE

DART AEROSPACE	
TITLE TONGUE ASSEMBLY, TOW DOLLY	
DWG NO. RBW0905G00134-3G-01-007	REV 5
MAT'L 304 S.S.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .005 FRACTIONS ± 1/8
FINISH	.XX ± .01 ANGLES ± 5°
SPEC	.X ± .1 SURFACES = 125/√
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: CLOUGH	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AGUSTA AW139
SCALE 1:2	DATE 2/12/2010 SHEET 5 OF 25

Michelle GagnonDonovan

From: Robert Aboud
Sent: Monday, April 30, 2018 4:37 PM
To: Michelle GagnonDonovan
Cc: Linda Lacelle
Subject: FW: RBW0905G10331-3GP
Attachments: Tow-Bar-Flir-Installed.pdf; RBW0905G12631-3G rev 7.PDF; RBW0905G00134-3G-01 rev 5.PDF; RBW0905G10331-3G-03 rev 2.PDF

FYI

Rob Aboud

Director of Supply Chain

DART AEROSPACE

T 1-613-632-5200 Ext.244

M 1-514-979-6138

www.dartaerospace.com



From: Robert Aboud
Sent: Monday, April 30, 2018 4:18 PM
To: Chantal Chartrand <cchartrand@dartaero.com>
Cc: Jason Leroux <jleroux@dartaero.com>
Subject: FW: RBW0905G10331-3GP

FYI

Rob Aboud

Director of Supply Chain

DART AEROSPACE

T 1-613-632-5200 Ext.244

M 1-514-979-6138

www.dartaerospace.com



From: Michael Lee
Sent: Tuesday, February 13, 2018 5:38 PM
To: Robert Aboud <raboud@dartaero.com>
Cc: Vanessa Morel <vmorel@dartaero.com>
Subject: RE: RBW0905G10331-3GP

Hey Rob,

RBW0905G10331-3G is a pick kit that includes the following:

- RBW0905G12631-3G

- RBW0905G00134-3G-01
- RBW0905G10331-3G-03

All drawings are attached.

If the customer has ordered a complete tow bar kit they would need all items mentioned above to be supplied.

Hope that helps,

Mike

From: Robert Aboud
Sent: Tuesday, February 13, 2018 5:03 PM
To: Michael Lee <mlee1@dartaero.com>
Cc: Vanessa Morel <vmorel@dartaero.com>
Subject: RBW0905G10331-3GP

Mike,

Got an order for this one

But the only drawing I see has a -03

Rob Aboud
Director of Supply Chain
DART AEROSPACE
T 1-613-632-5200 Ext.244
M 1-514-979-6138
www.dartaerospace.com





20 Terry Fox Drive, Vankleek Hill, Ontario K0B 1R0

Tel. (613) 678-3957 & (613) 678-2782 Fax (613) 678-3956 metec@metec.ca

CERTIFICATE OF CONFORMITY

SOLD TO:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, Ont.
K6A 1K7

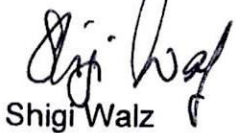
SHIPPED TO:

same

Quantity	Part Number	Part Name	P.O. Number
1	RBW0905G10331-3G-03P	Tow Bar (Flir) – Rear Assembly	39045
1	RBW0905G12631-3G	Safety Joint Assembly	39045
1	RBW0905G00134-3G-01	Tow Dolly Assembly	39045

We hereby certify that the above parts were made in conformance with applicable drawings.

METEC Metal Technology Inc.



Shigi Walz

Vankleek Hill, April 30, 2018